

Statement of D.E. Bernhardt

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Statement of D.E. Bernhardt
DOE Hearing on Yucca Mountain Draft Environmental Impact Statement
Salt Lake City, Utah
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My name is David Bernhardt. I thank you for the opportunity to provide comments on the proposed "Geological Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste (HLW) at Yucca Mountain Nevada.

I am Certified by the American Board of Health Physicist and have over 35 years experience in radiation protection and waste management. I worked for the U.S. Environmental Protection Agency (EPA) radiation programs for over 20 years and subsequently worked for Rogers and Associates Engineering in Salt Lake City. While with the EPA I worked in Las Vegas, Nevada, for over 17 years, primarily related to the Nevada Test Site off-site safety program. I am now semi-retired and am speaking as a private citizen.

- 1... The U.S. has taken a long torturous journey and is now approaching the threshold of a HLW depository. I believe, and the Draft EIS makes the case, that it is highly desirable that there be a common repository versus storage at numerous sites around the U.S. The Draft EIS, in the No-Action Alternative, denotes the cost incentive of a common repository at Yucca Mountain, versus storage at the 70 some sites in the U.S.. The cost incentive becomes even clearer if the additional costs for future remediation and health and safety at the 70 sites are included, if there is not adequacy long-term maintenance and control.

- 1 cont. The Yucca Mountain Site is in one of the most technically desirable areas of the U.S. for waste disposal. It is in an extremely arid area where evapotranspiration exceeds precipitation by a factor of 10. With proper design (minimize or eliminate the potential for ponding of precipitation), the movement of moisture is basically towards the surface, resulting in minimal infiltration. The geological formations provide for stability and isolation. The Nevada Test Site, Nellis Air Force Range, and Bureau of Land Management holdings provide for excellent isolation. The primary favorable attributes are the geology and climatology, the land isolation is supplemental.
- 2... [The Draft EIS provides a reasonable assessment of the risks associated with the implementation of disposal at the Yucca Mountain Site. It recognizes that there are risks and impacts and quantifies them. I believe, in many cases, due to the efforts to be
- 3 conservative or error on the high side, it significantly over estimates the risks. [The estimated doses comply with proposed U.S. Nuclear Regulatory Commission standard of 25 mrem per year, which I support as being reasonable. Even the conservatively high dose estimates in the Draft EIS appear to indicate compliance with the conservatively low U.S. EPA proposed HLW regulations (August 27, 1999), which contain both a dose criterion of 15 mrem (EDE) and a separate groundwater criterion.]
- 2 cont. [I suggest several items for the redraft of the EIS:
- The major radiation risk to the off-site population, in the next thousands of years, is from the release of natural radon-222 from the repository formation. [Yes, the development and operation of the repository may cause a slight increase in the release of radon-222 from this immediate area, but the overall impact will be minimal and not due to the radioactivity in the waste.

4 — The Summary, Page S-48 identifies doses from ingestion of groundwater, at about 1 million years after closure, at 5 kilometers from the repository. It should be clarified that the 5-kilometer location is well within the boundary of the repository, and if controls are maintained would **not** be a viable point of access. This is clarified in the base document (Table 5-6 in Chapter 5), but is still subject to misinterpretation/misrepresentation. The Summary is provided as a stand-alone document, and should be complete.

5 — The Summary should provide clear information on the size of the repository. Figures should include scales of distance to help readers assess the information.

2 cont. — The dose estimates should focus on realistic scenarios for both operations and accidents. The focus should be on best-estimate doses, with reduced emphasis on upper range doses and extremely low probability accidents.

6 [I commend the DOE on providing a comprehensive Draft EIS] and [strongly support 1 cont.
proceeding with the characterization and hopefully full implementation of Yucca
Mountain for disposal of HLW.]